REMARKS

Claims 20, 21, 23-36 and 38 are presently in the application. Claims 1-19, 22 and 37 have been canceled. Claims 26, 28, 29, 31-34 and 36 have been withdrawn from consideration as being drawn to a nonelected species.

Applicant notes that the examiner has neither rejected nor objected to claims 20, 21, 23-27 and 30. Applicant suspects that the examiner meant that claims 20, 21, 23-27 and 30 were objected to as dependent on a rejected claim and would be allowable if rewritten in independent form. Thus, claims 20 and 23 have been rewritten in independent form. Claims 20, 21, 23-27 and 30 are now in allowable condition.

Of course, if the examiner's failure to mention claims 20, 21, 23-27 and 30 in the last Office action was an oversight, the last Office action was then incomplete and a new non-final Office action is requested.

In the Office actions mailed August 24, 2007, January 25, 2008 and July 11, 2008, the examiner omitted a rejection or an indication of allowability of claim 24. Accordingly, the Office action mailed on July 11, 2008, should not have been made final. **Withdrawal of the finality of the July 11, 2008 Office action is requested.**

Claim 38 has been rejected under 35 USC 102(b) as anticipated by Boecking (US 2002/0023970). Reconsideration of the rejection is requested.

Independent claim 38 is directed to a fuel injection device comprising, inter alia, a **pressure booster** provided in a multi-part injector body, the **pressure booster** comprising a pressure booster piston, a working chamber on one side of the pressure booster piston, a

differential pressure chamber on an opposite side of the pressure booster piston, the pressure booster piston sealing the working chamber off from the differential pressure chamber, the pressure booster piston being actuated by means of a pressure change in the differential pressure chamber, and a high-pressure chamber defined, at least in part, by an end face of the pressure booster piston. In addition, claim 38 requires a nozzle chamber inlet hydraulically connecting the nozzle chamber with the high-pressure chamber.

According to the examiner, Boecking teaches a pressure booster piston (9, 15, 19), a working chamber (13), a differential pressure chamber (chamber surrounding 10 - connected to line 11.1?) and a high-pressure chamber (6). In reading claim 38 on Boecking, the examiner either misconstrues the language "a pressure booster" or totally ignores the language.

The examiner is reminded of the rule that all words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). See MPEP 2143.03. Thus, it is examiner error for the examiner to ignore the language "a pressure booster."

The examiner's attention is also directed to MPEP 2111, which instructs examiners as follows:

> During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." The Federal Circuit's *en banc* decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard:

> The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description." 37 CFR 1.75(d)(1).
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> **The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach**. *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999) (The Board's construction of the claim limitation "restore hair growth" as requiring the hair to be returned to its original state was held to be an incorrect interpretation of the limitation. The court held that, consistent with applicant's disclosure and the disclosure of three patents from analogous arts using the same phrase to require only some increase in hair growth, one of ordinary skill would construe "restore hair growth" to mean that the claimed method increases the amount of hair grown on the scalp, but does not necessarily produce a full head of hair.). (Empahsis added)

The language "pressure booster" is a common term used in the fuel injection art, the meaning of which is well known to those of ordinary skill in the art. As evidence of this fact, attention is directed to US 6,805,101, a copy of which is attached. In the fuel injection art, a

"pressure booster" is a device which increases the fuel injection pressure above the value furnished by a common rail system. See, US 6,805,101, col. 1, ll. 15-20. Numerous US patents in the fuel injection art have been issued using the term "pressure booster." See "Exhibit 1" attached. Sometimes other terms are used to refer to a device which increases the fuel injection pressure above the value furnished by a common rail system. For example, US 7,066,147 (copy attached) uses the term "pressure intensifying device" to describe a device which increases the fuel injection pressure above the value furnished by a common rail system.

Applicant's specification uses the term "pressure booster" in a manner which is totally consistent with the usage of the term in the art. For example, at para. 2, the specification describes the technical field of the applicant's invention as being related to fuel injection system having a "pressure booster" used to "boost pressure further in fuel injection devices with a high-pressure reservoir" (a "common rail" is a term used in the art to describe a high-pressure reservoir). See, also, para. 27, which explains the function of applicant's device as follows:

> Fuel flows from [high-pressure chamber 19] at a pressure level, which is higher than the pressure level of the high-pressure reservoir 2 [i.e., the common rail] and depends on the boosting ratio of the pressure booster 11, and travels on the one hand into the nozzle chamber 23 via the nozzle inlet 22 and on the other hand, flows into the control chamber 20 via the inlet throttle 21.

Thus, a person of ordinary skill in the art would properly interpret applicant's claim 38 as requiring a device which increases the fuel injection pressure above the value furnished by a common rail system. There is no such device disclosed in the Boecking reference.

Boecking teaches a fuel injector having a 3/2-way control valve body 9 and a pressure bolt 15 located on the underside of the 3/2-way control valve body 9 which acts on a transmission element 19 (see, p. 2, para 14). There is simply no teaching of any "pressure booster"structure in Boecking, i.e., structure or device which increases the fuel injection pressure above the value furnished by a common rail system. Thus, for at least this reason, Boecking does not anticipate claim 38.

Further, claim 38 requires "a pressure booster (11) provided in said multi-part injector body, said pressure booster (11) comprising a pressure booster piston (14), a working chamber (12) on one side of said pressure booster piston and a differential pressure chamber (17) on an opposite side of said pressure booster piston, said pressure booster piston (14) sealing the working chamber (12) off from the differential pressure chamber (17), **said pressure booster piston (14) being actuated by means of a pressure change in said differential pressure chamber (17)**, and a high-pressure chamber (19) defined, at least in part, by an end face (14a) of the pressure booster piston (14)."

In Boecking, the 3/2-way control valve body 9 and the pressure bolt 15 are moved upwards by the force of a spring 20 when a valve 3 is opened to relieve pressure in a control chamber 6. Thus, in Boecking, the so-called "pressure booster piston" (9, 15, 19) is actuated by means of a pressure change (actually, a pressure reduction) in what the examiner considers

the "high pressure chamber" 6, not in the "differential pressure chamber"(which the examiner identifies as the chamber surrounding element10) as required by the language of claim 38. For this additional reason, claim 38 is not anticipated by Boecking.

Claims 35 and 38 have been rejected under 35 USC 102(b) as anticipated by Schneider (US 4,538,576). Reconsideration is requested.

The examiner has determined that Schneider teaches a "pressure booster piston" (18). However, it is pointed out that the floating piston 18 in Schneider has two pressure faces of equal size. To generate a pressure boost, a pressure booster piston must have a differential surface area. In Schneider, the pressure is generated by the pump piston 16. The piston 18 serves solely to meter different fuel quantities. However, different fuel quantities have nothing to do with pressure boosting (see col. 4, ll. 18-27 and ll. 33-50).

As with Boecking, Schneider does not teach a pressure booster. Thus, for at least this reason, Schneider does not anticipate claim 35 or 38.

Nevertheless, the examiner has determined that Schneider teaches a "pressure booster piston" (18), a "working chamber" (20) on one side of said piston and a "differential pressure chamber" (30) on an opposite side of the "pressure booster piston" (18), the "pressure booster piston" (18) sealing the "working chamber" (20) off from the "differential pressure chamber" (30), the "pressure booster piston" (18) being actuated by means of a pressure change in the "differential pressure chamber" (30), and a "high-pressure chamber" (96). The examiner identifies the claimed "control line" which "extends essentially coaxially to an axis of symmetry of the pressure booster piston (14)" as the passage 46 in Schneider.

At page 5 of the final rejection, the examiner determines that the so-called "high-pressure chamber" (96) is defined, at least in part, by an end face of the "pressure boosting piston" (18) as required by the language of claim 38. This finding of the examiner is incorrect.

The chamber containing the check valve 96 is defined exclusively by the body 12. There is a port 86 which connects the chamber containing the check valve 96 to the metering chamber 30. The floating piston 18 can be said to define one wall of the metering chamber 30, but there is no reasonable way that one of ordinary skill could say that the chamber containing the check valve 96 is defined in any way by the floating piston 18. Thus, for this additional reason, claims 35 and 38 are not anticipated by Schneider.

Also, in Schneider, the so-called "pressure booster piston" (18) is not actuated by means of a pressure change in the so-called "differential pressure chamber" (30), as required by the language of claim 38. Instead, the so-called "pressure booster piston" (18) is actuated by means of a pressure change in the timing chamber (20) (the so-called "working chamber").

In col. 3, ll. 47-54, Schneider teaches that

> The injection phase begins when the control valve 80 prohibits fuel communication between passages 90 and 82, thus restricting flow from the timing chamber 20. The fuel within the timing chamber 20 will be compressed as the pumping plunger 16 descends, thus establishing a hydraulic link and forcing the metering piston 18 downward.

It is clear from this teaching that the metering piston 18 is not actuated by a pressure change in the metering chamber 30 (identifed by the examiner as the claimed "differential pressure chamber"). Rather, the metering piston 18 is actuated by a pressure change in the

timing chamber 20. Thus, Schneider does not anticipate claim 38, because it does not teach a pressure booster piston actuated by means of a pressure change in the differential pressure chamber occurring via the "control line" as required by claim 38.

In the final Office action, at page 5, the examiner insists that col. 3, l. 65 through col. 4, l. 15, of Schneider teaches "that movement of piston 18 is controlled by the opening of dump port 42 via passage 46." Even if this statement by the examiner is correct, it is not understood what it has to do with the language of claim 38.

Claim 38 requires a pressure booster comprising a pressure booster piston, a working chamber on one side of the pressure booster piston and a differential pressure chamber on an opposite side of the pressure booster piston, the pressure booster piston being actuated by means of a pressure change in the differential pressure chamber. Col. 3, l. 65 through col. 4, l. 15, does not teach that the "pressure booster piston" 18 is actuated by means of a pressure change in the "differential pressure chamber" 30. Rather, col. 3, l. 65 through col. 4, l. 15 explains that **after** the floating piston is actuated, the fuel in the metering chamber 30 is dumped when the passage 46 is aligned with the port 42.

Since claim 38 is generic and has been shown to be allowable over the applied prior art, it is proper to reinstate non-elected claims 26-28, 29, 31-34 and 36 and allow them along with allowable claim 38, on which they ultimately depend.

The Commissioner is hereby authorized to charge any or all fees associated with this communication to Deposit Account Number 07-2100.

The mailing of a corrected Office action, entry of the amendment and allowance of the application are respectfully requested.

Respectfully submitted,

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Enclosures: Exhibit 1 (3 pp.)
US 6,805,101
US 7,066,147

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